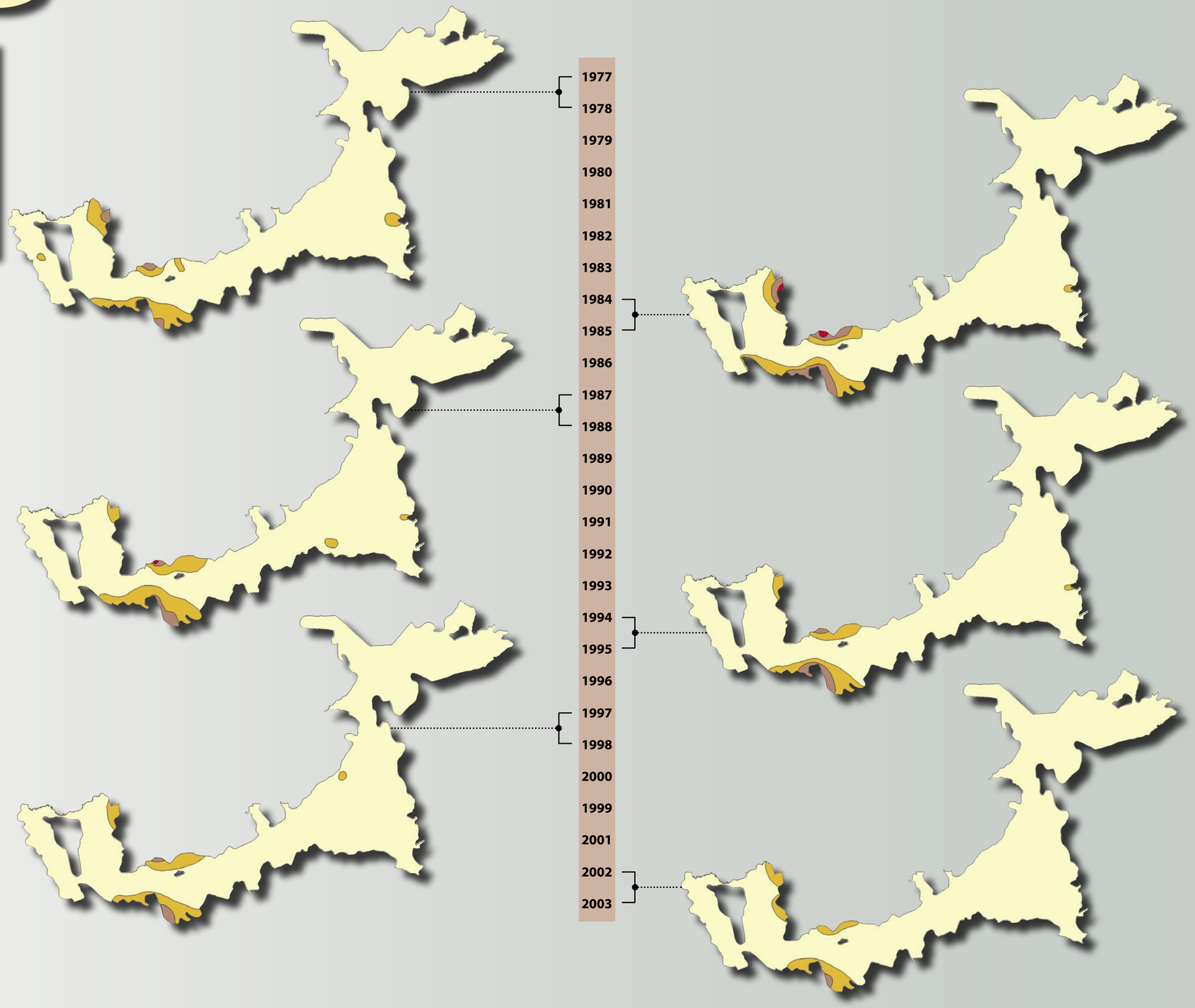
Nitrate Concentrations

Legend

Colors represent nitrate levels in parts per million (ppm).

- 0 - 3 ppm
- 5 - 10 ppm
- 3 - 5 ppm
- > 10 ppm



The illustrations in this section show concentrations of nitrate in the Aquifer through time. Nitrate is a form of nitrogen that is highly stable under conditions commonly found in the topsoil and aquifer sediments. Under natural conditions, nitrate occurs in very low concentrations, typically less than 0.1 part per million (ppm). Sources of elevated nitrate levels in the Aquifer include septic systems, fertilizer and stormwater (see page 21).

The earliest nitrate concentration map is from 1977-78, which represents the earlier stages of Aquifer protection activities in Washington and Idaho. The peak of observed nitrate degradation in the entire Aquifer was 1984-85. In 1985 a major effort on both sides of the state line was initiated to reduce septic system contamination of the Aquifer through installation of piped sewer collection systems. On all the maps, certain areas near the edge of the Aquifer show high levels of nitrate. These locations represent "eddy" areas where incoming contaminants from side hill development are not easily or quickly mixed with the better quality water recharging from the east.

Nitrate in drinking water above 10 ppm may cause illness. Nitrate is one by-product of human activities, and the presence of high levels of nitrate in groundwater is an indicator that other harmful, but less easily detectable, by-products of human activity may also be present. As an indicator chemical, nitrate is often used as a measure of overall aquifer water quality.

The good news about nitrate and other contaminants in the Aquifer is that ongoing protection programs have decreased the rate of contamination. Current trend analysis shows nitrate concentrations are decreasing despite significant population increases. The groundwater in the Aquifer remains some of the best quality water available anywhere.